

Technical Data Sheet

1.5mm Side Looking Phototransistor

PT908-7C

Features

- Fast response time
- High sensitivity
- Small junction capacitance
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

PT908-7C is a phototransistor in miniature package which is molded in a water clear plastic with spherical top view lens. The device is spectrally matched to infrared emitting diode.

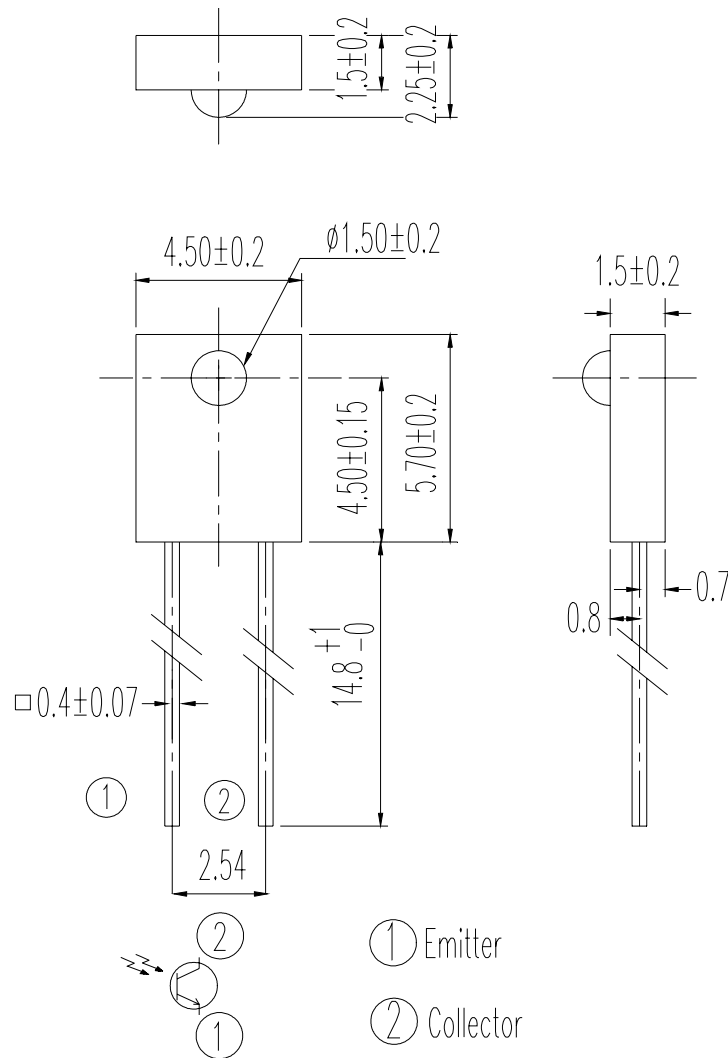
Applications

- Optoelectronic switch
- VCR , Video Camera
- Floppy disk drive
- Infrared applied system

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
PT	Silicon	Water Clear

Device No:DPT-090-081

Package Dimensions

Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions $\pm 0.1\text{mm}$

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector-Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature	T_{opr}	-25 ~ +85°C	°C
Storage Temperature	T_{stg}	-40 ~ +85°C	°C
Lead Soldering Temperature	T_{sol}	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	P_c	75	mW

Notes: *1:Soldering time $\leq$ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2mA$ $E_e=1mW/cm^2$	---	---	0.4	V
Rise Time	t_r	$V_{CE}=5V$ $I_C=1mA$ $RL=1000\Omega$	---	15	---	μS
Fall Time	t_f		---	15	---	
Collector Dark Current	I_{CEO}	$E_e=0mW/cm^2$ $V_{CE}=20V$	---	---	100	nA
On State Collector Current	$I_{C(on)}$	$E_e=0.555mW/cm^2$ $V_{CE}=5V$	0.78		3.12	mA
Wavelength of Peak Sensitivity	λ_p	---	---	860	---	nm
Rang of Spectral Bandwidth	$\lambda_{0.5}$	---	400	---	1100	nm

Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

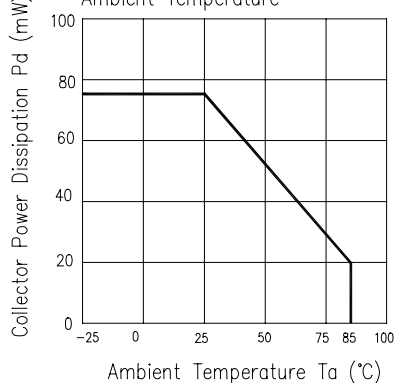


Fig.2 Collector Dark Current vs. Ambient Temperature

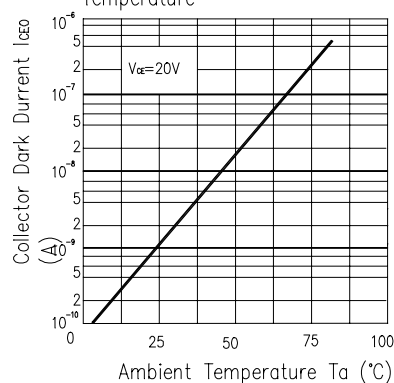


Fig.3 Relative Collector Current vs. Ambient Temperature

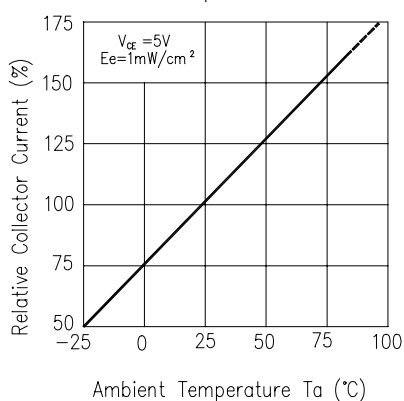


Fig.4 Collector Current vs. Irradiance

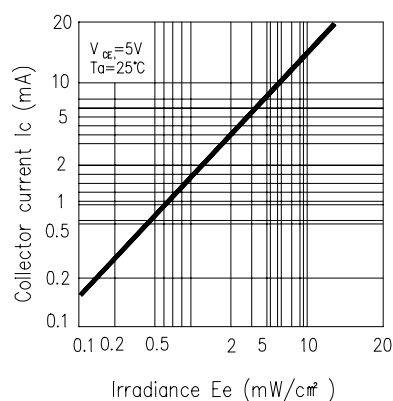


Fig.5 Spectral Sensitivity

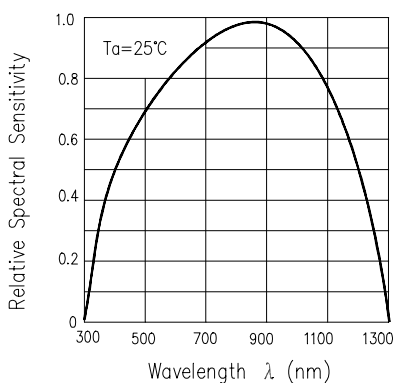
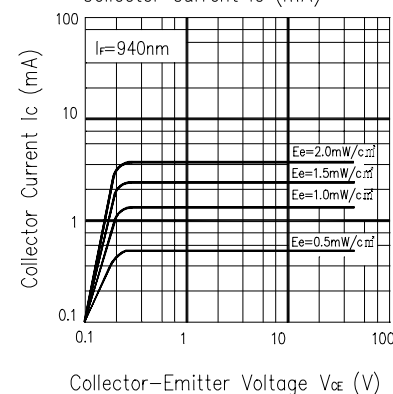
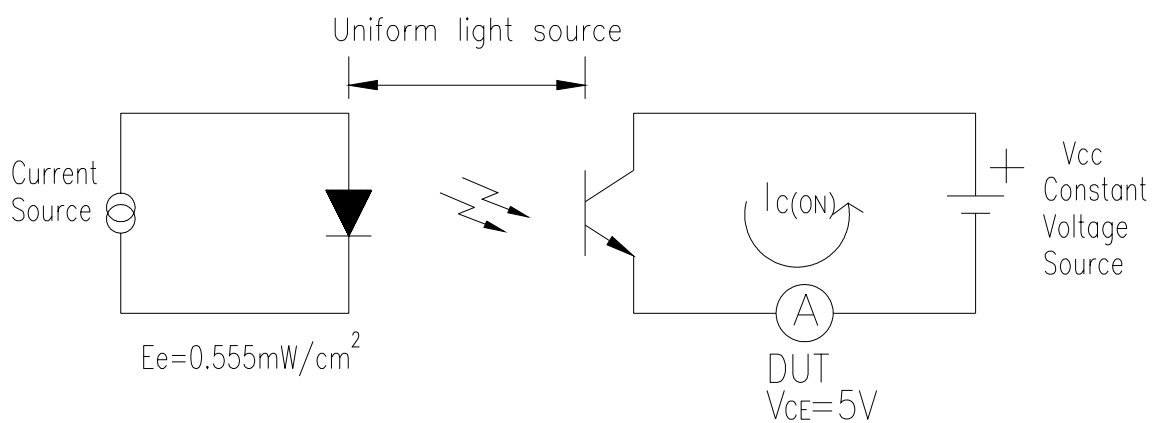


Fig.6 Collector Current vs. Collector Current Ic (mA)



Test method

Light current test method for PT:



Ranks

Color code	Parameter	Symbol	Min	Max	Unit	Test condition
Black	BIN1	$I_{C(ON)}$	0.78	1.56	mA	$V_{CE}=5V$ $E_e=0.555\text{mW}/\text{cm}^2$
Black	BIN2		1.09	2.02		
Black	BIN3		1.40	2.73		
Black	BIN4		1.56	3.12		

Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP:260°C±5°C	10sec	22pcs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C 30mins ↓ 5mins L : -55°C 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H :+100°C 5mins ↓ 10secs L :-10°C 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$V_{CE}=5V$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1